EAST GOSHEN TOWNSHIP
PLANNING COMMISSION
Agenda
Wednesday, July 3, 2013
7:00 PM

Workshop Session: 7:00 PM to 7:30PM (Conference Room – Open to the Public)

Formal Meeting: 7:30PM (Board Room if needed)

A. Call to Order / Pledge of Allegiance and Moment of Silence
B. Chairman will ask if anyone is going to record the meeting
C. Review of Tracking Log / Determine need for Workshop Meeting
D. Public Comment on Non-Agenda Items
E. Approval of Minutes
   1. June 5, 2013
F. Acknowledge Receipt of New Applications
   1. 1551 Colonial Ln. – Subdivision and Land Development Plan
G. Subdivision Plans
   1. 1551 Colonial Ln. – Subdivision and Land Development Plan
H. Land Development Plans
I. Conditional Uses and Variances
J. Ordinance Amendments
K. Comprehensive Plan Update
L. Old Business
   1. Zoning Ordinance Review – Solar energy sample ordinances
M. New Business
N. Any Other Matter
O. Liaison Reports
P. Dates of Importance

June 13-Aug 22	Town Tours & Village Walks (Chester County) Thursdays	5:30 PM
July 02, 2013	Board of Supervisors	7:00 PM
July 03, 2013	Planning Commission **Park Commission will not meet in July**	
July 04, 2013	Independence Day Office Closed	
July 04, 2013	Farmer's Market	3-7:00 PM
July 08, 2013	Municipal Authority **(CANCELLED)**	
July 10, 2013	Conservancy Board	7:00 PM
July 11, 2013	Historical Commission	7:00 PM
July 11, 2013	Farmer's Market	3-7:00 PM
July 15, 2013	Commerce Commission	7:00 PM
July 16, 2013	Board of Supervisors	7:00 PM
July 17, 2013	Police Commission WEGO Police Station	5:30 PM
July 18, 2013	Farmer's Market	3-7:00 PM
July 22, 2013	Comp Plan Task Force	7:00 PM
July 25, 2013	Farmer's Market	3-7:00 PM
July 25, 2013	Town Tours & Village Walks Will be in Historic Goshenville	5:30 PM
July 1-Aug 2, 2013	Youth Recreation Day Camp	8:45-12:00 PM

Summer 2013 Newsletter Articles:
Posted to the Website on or about: July 1, 2013

Bold Items indicate new information to review.

Planning Commission Application Tracking Log

Application Name	Application (CU,LD,O, SD,V, SE, CA)	Type (Sk, P, F)	Date Filed	Start Date	Date to Yerkes/Consultant	Date to CCPC	Date to Abutting Prop. / ABC's	Extension	PC NLT Action Date	BOS NLT Action Date	Hearing Date	Drop Dead date
1551 Colonial Ln. / Sunny Ridge Farms	SD	P	6/25/2013	7/3/2013	6/26/2013	6/26/2013	6/26/2013	NA	9/4/2013	10/1/2013	NA	10/1/2013

Bold = New Application or PC action required

Draft
EAST GOSHEN TOWNSHIP
PLANNING COMMISSION MEETING
June 5, 2013

The East Goshen Township Planning Commission held a regularly scheduled meeting on Wednesday, June 5, 2013 at 7:00 p.m. at the East Goshen Township building. Members present were: Chairman Susan Carty, Dan Daley, Adam Knox, Al Zuccarello, George Martynick, Jim McRee and Nathan Cline. Also present were Mark Gordon, Township Zoning Officer; Charles Proctor, Township Supervisor; Ginnie Newlin, Conservancy Board; and Erich Meyer, Park & Recreation Commission.

COMMON ACRONYMS:

BOS – Board of Supervisors
BC – Brandywine Conservancy
CPTK – Comprehensive Plan Task Force
CVS – Community Visioning Session

A. CALL TO ORDER

1. Sue called the meeting to order at 7:00 pm and led those present in the Pledge of Allegiance. There was a moment of silence.
Sue asked if anyone would be recording the meeting. There was no response.

B. CHAIRMAN'S REPORT

1. Sue spoke with Jon Altshul, Township CFO, about the budget for 2014 and she doesn't feel there is a need to have him come to a meeting to discuss it. He will prepare a draft and send it to the Commission for approval.
2. Sue reported that last Thursday, May 30, the CPTK meeting was about the Visioning Session which was held Monday June 3. It went very well. The SCA was reviewed and some changes were made. The Planning Commission should review it and send it to the BOS for review.

C. NEW BUSINESS

1. Central Chester County Bicycle and Pedestrian Circulation Plan

Presentation by Randy Waltermyer, Project Manager and Director of Transportation for the Chester County Planning Commission - They are approaching 7 municipalities with this plan. He is requesting endorsement to the BOS. He gave the BOS an update in December 2012. The Advisory Committee for the plan has met several times in the past 18 months. Public meetings have been well attended and feedback has been positive. There is no direct obligation or responsibility to the municipalities. He recommends that the Commission members review the entire plan on the CCPC website.
Adam asked about the goal timeline. Randy explained there is no absolute timeline. One step will be to look at the ordinances to see if they need to be amended.
George likes this plan because, when you think about all the people who take their bikes to the shore, there should be a demand for this.
Nate likes the report. Since East Goshen is the furthest East is there a plan to connect to Okehocking or Ridley Creek Park? Randy mentioned that the Patriots Path into Malvern may come south into Delaware County.
Nate asked what the plan is for Paoli Pike. Mark feels a feasibility study will have to be done. Because of the traffic volume and width of the road, the path should probably be a separate trail instead of widening the road.

Nate moved to recommend that the Board of Supervisors endorse the Central Chester County Bicycle and Pedestrian Circulation Plan and encourage the Comprehensive Plan Task Force to include the plan into the 2015 East Goshen Township Comprehensive Plan update. George seconded the motion. The motion passed unanimously.

D. APPROVAL OF MINUTES

1. Sue noted that the minutes for the May 1, 2013 meeting were approved.

E. SUBDIVISION PLANS

1. 1637 Manley Road – John Smerga, engineer, was present to represent Mrs. Patricia O'Neill, property owner. He explained that this is a 5 acre lot on the NS of Manley Road west of Pheasant Run. A stream goes south to north through the property. Maps of the floodplain differ slightly. He approached FEMA to request that a LOMA (Letter of Minor Adjustment) be put in place. He feels the floodplain is controlled by the 36" pipe that goes across the road. The proposed lot is upstream from the floodplain. This is a non-engineered stream. Mark wants to be sure there will be no flooding. John is confident the sight distances won't be a problem. The existing lot will stay as is with a house, paddock and barn.

Dan commented that the plan shows a spillway. Was there a dam? John explained that there was a pond which was abandoned, so there is only a stream now. These structures are still there. There will be public sewer.

Nate asked if he can work with FEMA and submit a land development plan. John has a problem with the grade on one side of the stream on the current FEMA map. Mark mentioned that he can move the request along if 80% of the area is not floodplain.

Public Comment: James Lamont, 209 Edith Lane, lives next door. Manley and Edith has become a busy intersection. He is concerned about traffic on the road and where they plan to put the driveway. He is also concerned about the water that comes down Manley from Windermere aparatments. He has seen a backhoe in the stream.

Adam asked about the culvert and adjustment to the size of the pipe. Mark commented that it is working and there is no plan to change it.

F. LAND DEVELOPMENT PLANS

1. Goshen Meadows Apartments – The applicant was represented by Mark Thompson, attorney: Dennis O'Neill, engineer; and David Plonik, architect. Mark Thompson reported that they received a clean review letter from the township engineers. Dennis O'Neill reported that there will be a total of 62 units. The size of the buildings was increased slightly to accommodate ADA requirements. The ADA entrance is the one that is the closest to the parking lot of the building. There will be a 2500 sq. ft. area for a fenced dog park. The sidewalk will lead to the existing pool. In the wooded area, there is a bridge across a stream to an unused tennis court. They will repair the bridge and clean out the area to make additional walking space. In the entire complex, 54,190 sq. ft. of recreational space is provided. On April 10, 2013, the Conservancy Board approved the landscape plan. Some additional species were added in order to keep the number of plants in one species to 10.

Al questioned the mulch paths and asked if there is a way to keep it in place. Dennis is not aware of any netting to put on top of the mulch.

Adam mentioned the emergency exit onto West Chester Pike. He is concerned about the grass cover and recognition of the path. Dennis is looking at stamped pavement which won't have the grass cover.

Jim commented that period plantings are marked in red on the landscape plan. Dennis explained that the landscape architect researched the plants that were growing in this area from 1850-1900.

George is concerned that, if the tennis court was allowed to decay, what might happen to this project? Dennis commented that the new owner, Metropolitan, took over the property 15 years ago and the tennis court and bridge were in disrepair then.

Dan questioned the new walking area in the floodplain. Dennis explained that there is an existing walkway and bridge. They will clean out the invasives and put down mulch.

Dan asked about grade changes. Dennis explained that the emergency exit road grade needed to get a fire truck in would require removal of lots of dirt. They used berms to change the grades to tie into the existing grade. Drainage areas were maintained. All roof drains go to subsurface basins.

David Plonick described the floor plans. Anyone parking in handicapped spaces will be able to come right into the building. The units are 1,100 sq.ft., 2 bedrooms, 2 baths with a 100 sq. ft. balcony. These buildings are 2 bdrms because the majority of the existing buildings are 1 bdrm. The historic house will have 1 unit on the 2nd floor and 1 unit on the 3rd floor about the same size as the new buildings. The 1st floor will have the rental office for the community and a fitness room.

Sue pointed out that, on the plan, there is a condition to consider designing the new buildings to look like the historic building. This is the first time the Commission has seen a rendering of the buildings and they don't have anything that connects to the historic building. David mentioned that they met with a historic consultant who recommended the 3-line explanation that is on the plan. The historic building will stand out in this plan. The stucco, trim, roofing, masonry, repairs to windows and porch will be done to the historic building.

Al made the following motion: The subject property is located at 1325 West Chester Pike, West Chester, PA 19382. The applicant has received conditional use approval from the Board of Supervisors on September 4, 2012 with ten (10) conditions. The land development plan proposes to develop the property and construct five (5) new apartment buildings with a total of 60 new apartment units and to adaptively reuse the existing historic resource with two (2) residential apartments, a fitness room and rental office for the community.

Madame Chairman, I move that the Planning Commission recommend Preliminary/Final approval of the Goshen Meadows Investors, L.P. Land Development application and plans dated October 17, 2012 and last revised May 17, 2013 with the following conditions:

1. The Applicant shall address all remaining comments outlined in the Township Engineer's review letter dated 5/31/2013 prior to approval.
2. The Plan shall not be released for recording until all of the escrow for the improvements depicted on the plans has been posted.
3. The Applicant shall pay 10% of the sewer tap-in fee for the entire project to reserve the sewer capacity for the project, prior to the plans being released for recording.
4. The Applicant shall pay an impact fee of $396.25 per trip for the project prior to the issuance of any building permit.
5. The Applicant will follow all applicable Federal, State and Local laws and secure all proper permits prior to construction of the improvements depicted on the plans.

Jim seconded the motion.

Public Comments:

Steve DiAntonio, 8 Reservoir Rd. – He feels that moving that much soil will disturb the root systems of the trees. Mark commented that all of the trees above this area are going to be removed. Steve mentioned the height of the power lines at the emergency exit. Mark will check this out tomorrow.

Steve asked about the height of the berm near his property. Mark stated it is a 1 story slope and explained how it is calculated.

Steve asked about placement of plants on the berm. Adam showed him on the plan where everything will be placed.

There was no further discussion. The motion passed unanimously.

G. ORDINANCE AMENDMENTS

The Commission reviewed the clean copy of the WCF Amendment as per the Pennsylvania Wireless Broadband Communications Act. Nate moved that the Planning Commission recommend that the Board of Supervisors approve the Zoning Ordinance incorporating the new requirements outlined in the Pennsylvania Wireless Broadband Communications Act. P.S. 53 and some minor changes to the annual reporting requirements. Al seconded the motion. The was no discussion. The motion passed unanimously.

H. SUSTAINABLE COMMUNITIES ASSESSMENT

Mark explained that this document contains the opinion of the Brandywine Conservancy as to where East Goshen is now regarding sustainability. The Commission should review the SCA and recommend that the BOS review it and forward any comments to the CPTF.

I. GOALS

The 2 goals that were given by the BOS were reviewed. Nate and Dan will look up examples of solar ordinances for the Commission to review.

J. ANY OTHER MATTER

Mark announced that Liberty Towers is selling their tower bases to Sigwire. There are 290 sites, 35 sites completed, for $33 million. There will be no change in the Township contract.

K. ADJOURNMENT

The next meeting will be held on Wednesday, July 3, 2013 at 7:00 pm. There being no further business, a motion to adjourn the meeting was made by Dan and seconded by Adam. The meeting adjourned at 9:30 pm.

Respectfully submitted,_____

Ruth Kiefer, Recording Secretary

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PA

SUBDIVISION AND / OR LAND DEVELOPMENT APPLICATION

Date Filed: 06-25-2013

Application for (Circle one):

Subdivision Land Development (Subdivision & Land Development)

A. Application is hereby made by the undersigned for approval of a Subdivision and or Land Development Plan, more particularly described below.

1. Applicant's name: Sunny Ridge Farms, LLC

   Address: 1505 Generals Way, West Chester, Pa. 19380 Phone: 484-244-4848

   Fax: 484-244-4211 Email: rbunn@qoacesinc.com

2. Name and address of present owner (if other than 1. above)

   Name: The Estate of Moine Rowland, Deceased and Mardell J. Monhan, Co-Trustees. Kelly Nagle Trustee

   Address: 1551 Colonial Lane, West Chester, Pa 19380 Phone: 610-989-9993

   Fax: _____ Email: _____

3. Location of plan: 1551 Colonial Lane

4. Proposed name of plan: Residential Land Development for Sunny Ridge Farms, LLC

5. County Tax Parcel No.: 53-004-0041 Zoning District: R-2 Low Density Residential

6. Area of proposed plan (ac.): 5.5 Acres Number of lots: 4

7. Area of open space (ac.): N/A

8. Type of structures to be constructed: Residential Dwellings

9. What provisions are to be made for water supply and sanitary sewer?

   Private Water (Onlot Wells) and Public Sewer

10. Linear feet of road to be constructed: 400 LF of Road Widening

11. Name of Engineer: John Mullin of Mullin Engineering

    Phone Number: 610-420-5309 Fax: _____

    Email address: John@mullinengineering.com

12. Name of Land Planner: N/A

Phone Number: _____ Fax: _____

Email address: _____

B. I/We agree to reimburse the Township of East Goshen for such fees and expenses the Township may incur for the services of an Engineer(s) in investigations, tests, and review in relation to the Subdivision Plan.
C. I/We agree to post financial security for the improvements depicted on the Subdivision and or land Development Plan pursuant to the Subdivision and Land Development Ordinance.
D. I/We agree to reimburse the Township of East Goshen for all inspection fees at the actual cost to Township.

NOTICE

The Township requires an Occupancy Permit before any building can be occupied; no Occupancy Permit will be issued until final inspection and approved by the Zoning Officer and Building Inspector.

Owner Signature

Applicant Signature

Administrative Use

Fees received from applicant $ 400.00 basic fee, plus $ 350 ~~per lot~~

For 3 or More lots = $ $750.00

Application and plan received by: _____ Date: 6/25/2013
(Signature)

Application accepted as complete on: 6/25/2013
(Date)

EAST GOSHEN TOWNSHIP, CHESTER COUNTY PA
SUBDIVISION AND/OR LAND DEVELOPMENT APPLICATION

SUBDIVISION AND/OR LAND DEVELOPMENT CHECKLIST

This checklist outlines the steps and items needed to insure completeness of the application and to insure the application follows the process and conforms to the timeframe outlined by the State of Pennsylvania and East Goshen Township. This checklist is broken into two parts, the Application Process and the Review Process. The application process must be completed in its entirety prior to the advancement into the Review Process.

*** Review the formal Planning Commission review procedure on page five.**

Application for (Circle all appropriate): (Subdivision Land Development)

Applicant Information:

Name of Applicant: Sunny Ridge Farms, LLC

Address: 1505 Generals Way, West Chester, Pa. 19380

Telephone Number: 484-244-4211 Fax: 484-244-4848

Email Address: rbunn@qoacesinc.com

Property Address: 1551 Colonial Way, West Chester, Pa 19380

Property Information:

Owner's Name: The Estate of Moine Rowland, Deceased and Mardell J. Monhan, Co-Trustees. Kelly Nagle Trustee

Address: 1551 Colonial Lane, West Chester, Pa 19380

Tax Parcel Number: 53-004-0041 Zoning District: R-2 Acreage: 5.5 Acres

Description of proposed subdivision and or land Development:

4 Lot Residential Subdivision and Land Development of an Existing Residential 5.5 Acre Parcel.

EAST GOSHEN TOWNSHIP, CHESTER COUNTY PA
SUBDIVISION AND/OR LAND DEVELOPMENT APPLICATION

Application Process Checklist (Administrative use only):

Item	Date Complete
1. Completed Township Application Form:	6-25-13
2. Township application and review fees paid:	6-25-2013
3. County Act 247 Form complete:	6-25-2013
4. Appropriate County Fees included:	6-25-2013
5. 11 Copies of sealed Sub / LD plans:	6-25-2013
6. 11 copies of other required plans:	
a. Landscape: (sealed)	NOT PROVIDED
b. Conservancy: (sealed)	NOT PROVIDED
c. Stormwater Management: (sealed)	✓
7. Three copies of the stormwater report and calculations:	✓
8. Copies of supplementary studies, if required:	
a. Traffic Impact Study:	N/A
b. Water Study:	N/A

Application accepted on 6/25/2013 by MARK GORDON

Official Signature _____ Title TWP. ZONING OFFICER

Review Process Checklist (Administrative use only)

Item	Date Complete
1. Date of first formal Planning Commission Meeting following complete submission of application, (Day 1):	7/3/13
Date Abutting property letter sent:	6-26-13
2. Date presented to Planning Commission:	7-3
3. Date submitted to CCPC:	6-25
4. Date submitted to Township Engineer:	6-25
5. Date by which the PC must act, (Day 70):	9-11
6. Date by which Board of Supervisors must act, (Day 90):	10-1
7. Date sent to CB:	6-26
8. Date sent To MA:	"
9. Date sent to HC:	"
10. Date sent to PRB:	"
11. Date sent to TAB:	"

610-692-7171
www.eastgoshen.org

BOARD OF SUPERVISORS
EAST GOSHEN TOWNSHIP

CHESTER COUNTY
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

FYI

June 26, 2013

Dear Property Owner:

The purpose of this letter is to inform you that Sunny Ridge Farms, LLC has submitted a Subdivision and Land Development application and plans for the property at 1551 Colonial Lane, West Chester, PA 19380 (TPN 53-4-41).

Sunny Ridge Farms, LLC is proposing to subdivide and develop the 5.5 acre property creating four lots and single family homes.

Pursuant to Township policy, property owners within 1,000 feet of a proposed development are notified of subdivision and land development submissions.

The meeting dates and times scheduled for the review and discussion of this application are outlined below.

July 3, 2013 - Planning Commission meeting (workshop at 7:00 pm, formal meeting @ 7:30 pm) **(Presentation of Subdivision and Land Development Plan)**

August 7, 2013 - Planning Commission meeting (workshop at 7:00 pm, formal meeting @ 7:30 pm)

September 4, 2013 - Planning Commission meeting (workshop at 7:00 pm, formal meeting @ 7:30 pm)

September 17, 2013 - Board of Supervisors (7:00 pm)

All meetings are held at the Township Building, are open to the public and **subject to change**. The application and plans for this proposed development are available for review at the Township Administrative Building during normal business hours. Please give me a call at 610-692-7171 or email me at mgordon@eastgoshen.org if you have any questions or need additional information.

Sincerely,

Mark A. Gordon
Township Zoning Officer

Cc: Township Authority, Boards and Commissions

F:\Data\Shared Data\Property Management\53-4\53-4-41 (1551 Colonial)\Sunny Ridge Farms SD June 2013\1000 foot letter 06262013.doc

Memorandum

East Goshen Township
1580 Paoli Pike
West Chester, PA 19380
Voice: 610-692-7171
Fax: 610-692-8950
E-mail: mgordon@eastgoshen.org

Date: 6/27/2013
To: Planning Commission
From: Mark Gordon, Township Zoning Officer
Re: Solar Energy Systems

Dear Commissioners,

All zoning districts in East Goshen allow for solar energy systems as an accessory use. Due to the nature of these facilities now I believe it is prudent to look at some additional regulations to appropriately manage the potential impacts of this type of use.

240-32 Accessory Uses

O. Solar energy system. A solar generating energy system shall be permitted. No such system shall deny solar access of adjacent lots, exceed the maximum height regulations for the zoning district in which it is located or be located within the front yard or a required minimum side or rear yard.

Township of East Goshen, PA
Thursday, June 27, 2013

Chapter 240. ZONING

Article V. Supplemental Regulations

§ 240-23. General regulations.

General regulations applicable to all districts.

A. Limit of one principal use. No more than one principal use shall be permitted on a lot unless specifically permitted by this chapter.

B. Principal buildings.

(1) If two or more principal buildings are located on a lot, each principal building shall conform to all requirements of this chapter as if each building were on a separate lot. The required land development plan shall comply with all the standards and improvements required by Chapter **205**, Subdivision and Land Development.

(2) Street frontage required and flag lots.

(a) Every principal building shall be built upon a lot with frontage upon a public or private street improved to meet Township standards or for which such improvements have been ensured by the posting of a performance guaranty pursuant to Chapter **205**, Subdivision and Land Development.

(b) Flag lots (also known as "pole lots").

[1] A flag lot, as illustrated in the Appendix, is a lot that does not meet the minimum lot width requirement at the minimum (front yard) building setback line and/or at the street line, and which includes an elongated extension to connect the bulk of a lot to a street.

[2] The creation of an individual flag lot shall be permitted by right, provided that all of the following conditions are met:

[a] The lot shall meet the minimum lot width established in the applicable zoning district. **[Amended 6-1-1999 by Ord. No. 129-D-99]**

[b] The pole portion of the lot (which is the portion that does not meet the minimum lot width at the minimum building setback line) shall not exceed

400 feet in length as measured from the street right-of-way, and the pole portion shall be part of the lot (versus being an easement).

[c] A maximum total of one flag lot may be created from each parent lot (see definition in § **240-6**) that existed as a single and separate lot of record at the time of adoption of this chapter.

[d] The applicant shall prove to the satisfaction of the Township that the proposed driveway will have adequate access for emergency vehicles.

[e] The pole portion of the flag lot shall maintain an absolute minimum lot width of 40 feet for its full length.

[f] All lots, including but not limited to new and parent lots, shall meet the applicable minimum lot area and building setbacks.

(c) See Sketch G in the Appendix.

C. Maximum height of buildings and structures. **[Amended 5-7-2002 by Ord. No. 129-K-02]**

(1) Unless specifically permitted, no building or structure shall exceed the maximum height of buildings specified in this chapter, except that the regulations shall not apply to church steeples which are usually placed above the roof level and are not intended for human occupancy.

SOLAR

(2) Structures such as flagpoles, windmills, watertowers, silos, solar energy collectors and the equipment used for the mounting of such collectors shall be subject to and shall not exceed the maximum permitted building height unless a special exception is granted by the Zoning Hearing Board and the Board affirmatively finds that such structure is proposed, designed, intended and limited in use only to such purpose. In such case, the Board may approve such increased height as is proven by the applicant to be warranted by the functional needs of the structure, subject to such reasonable limitations and conditions as the Board shall impose, provided the height allowed by the Board shall not exceed two times the permitted building height absent the Board's granting of a variance and provided, further, that no structure shall significantly impair solar access of adjacent buildings or solar collector locations.

D. Lot and yard requirements and sight distance.

(1) Lot area and yard requirements. The lot or yard requirements for any new building or use shall not include any part of a lot that is required by any other building or use to comply with the requirements of this chapter. No required lot area or yard shall include any property, the ownership of which has been transferred subsequent to the effective date of this chapter if such property was a part of the area required for compliance with the dimensional requirements applicable to the lot from which such transfer was made.

(2) Minimum lot area and lot area per dwelling unit. Where a minimum lot area is specified, no principal building or use shall be erected or established on any lot of lesser area, except as may be permitted in Subsection **D(4)**.

(3) Minimum lot width. Where a minimum lot width is specified, no principal building shall be erected on any part of a lot which has a width of less than is specified in the appropriate zoning district except as may be permitted by Subsection **D**.

(4) Exceptions to minimum lot areas and yards for nonconforming lots. A building may be constructed on any lot which was lawful when created and which, prior to the effective date of this chapter, was in single and separate ownership duly recorded by plan or deed, provided that the yard requirements are observed.

(5) Spacing of nonresidential buildings on the same lot.

(a) Where two or more nonresidential principal buildings are proposed to be built on a lot in one ownership, each such building shall be separated from another such building by at least twice the minimum side yard requirement for each respective building in the zoning district.

(b) In the case of a building such as a shopping center, an office center or other similar building where there is a row of individual uses, this side yard requirement applies to the building rather than to the individual uses.

(6) Through lots. In the case of through lots, unless the prevailing front yard pattern on adjoining lots indicates otherwise, front yards shall be provided on all frontages.

(7) Front and side yards of corner lots. On a corner lot, the yard adjoining a side street shall equal the required front yard for lots facing that street.

(8) Front yard regulations. Where a minimum depth of a front yard is specified in a district, an open space of at least the specified depth shall be provided between the street line or lines and the nearest point of any building or structure, except when permitted elsewhere in this chapter.

(9) Side and rear yard requirements. Where a minimum width of side yard or depth of rear yard is specified, no building, structure or tennis court shall be erected within the specified distance from either side lot line or rear lot line, except when specifically permitted elsewhere in this chapter.

(10) Exception to the required yards. Subject to Subsection **D(11)**, the district's yard requirements shall not apply to an arbor, open trellis, flagpole, unroofed steps, unroofed terrace, recreational or drying yard, awning or movable canopy which projects no more than 10 feet, or an open fire escape or unroofed porch which extends no more than six feet into any yard.

(11) Sight distance at intersections. Whenever a new street (public or private), accessway or driveway intersects a public or arterial street, the applicant shall establish a clear sight triangle that would provide sight distance meeting standards of PADOT, as amended. Such PADOT standards shall be used regardless of whether a state-owned or Township-owned street is involved. Vegetation and other visual obstructions within this triangle shall be limited to a height of not more than two feet above the center-line grade with the

exception of official postal mailboxes, sign posts and tree trunks which shall be excluded from this two-foot minimum height requirement.

pennsylvania
STATE OF INDEPENDENCE

Solar Energy Systems

A Guide for Pennsylvania Municipal Officials

Here comes the Sun!

12/1/2009

Governor's Solar Working Group

Table of Contents

Introduction

This guide is a primer for local government officials, code officials, engineers and solicitors on Solar Energy Systems. With the passage of the Pennsylvania Alternative Energy Investment Fund and the growth of alternative energy technologies, solar energy systems will become more commonplace in municipalities across the Commonwealth. Solar energy is unique in several ways.

- **Location** Solar projects can be located anywhere but are more viable where there is more sunshine. The potential for solar in Pennsylvania is relatively consistent across the Commonwealth although it is higher in the Philadelphia region than the Pittsburgh region which receives about 9% more solar radiation on an annual basis than Pittsburgh.
- **Size** Solar projects come in all sizes. Municipalities will see solar projects proposed on residential, commercial, industrial, agricultural, institutional and utility scale.
- **Ownership** Solar project ownership is diverse. From residential to utility scale, the owner of the solar energy system can vary from property owner equity to a fully leased project.
- **Technology** Solar technology is rapidly changing. Solar technology is wide ranging including: modules and collectors mounted to rooftops, building integrated roofing and glazing, ground mounted pole and racks systems, as well as solar farms with modules ground mounted on the hillsides.

The solar industry will create new business and jobs and change the appearance of homes, businesses and landscapes throughout Pennsylvania communities. The goal of this guide is to assist local municipalities with integrating solar energy systems into existing government functions including the insurance of public health and safety, regulation of land use and enforcement of general codes and construction standards.

This guide applies to solar energy systems regardless of size or purpose (i.e. residential, commercial, etc.). It is neither a technical nor economic guide for designing or installing a solar system. Rather, it introduces solar energy system technology while addressing relevant issues and local government's role in facilitating and regulating solar energy systems in existing construction. (This guide will be updated periodically and available on line.)

Solar Working Group

The Solar Working Group, convened by the Governor's Office and Department of Environmental Protection (DEP), is charged with developing solar energy for adoption into local ordinances in Pennsylvania's municipalities. One of the tasks identified by the group is to provide timely information to local officials, residents and businesses. As such, this guide provides an overview of solar energy systems for a range of Pennsylvania communities.

The Pennsylvania Alternative Energy Investment Fund – Act #1

The time has come to power homes and businesses with solar technologies. Soon, thousands of individuals, businesses and communities will rely on the planet's most abundant natural resource—the sun—for some of their power needs. Solar energy is a renewable alternative to conventional power plants that burn fossil fuels and release emissions including greenhouse gases contributing to climate change.

The State of Pennsylvania is fostering solar power to create jobs, promote business development and stimulate energy independence, as well as reduce the environmental impacts from electricity generation and fossil fuel usage. Each of the 67 counties in Pennsylvania can benefit from advancement of solar power. The Pennsylvania Alternative Energy Investment Fund provides the following funding for our solar energy future:

- $100 million through the **PA Sunshine Solar Program** to provide loans, grants and rebates that cover up to 35 percent of the costs residential consumers and small businesses incur from installing solar energy technology. It is important to note that these rebate levels are established by DEP and will change over time.

- $80 million in grants and loans for economic development projects in the solar sector. These solar grants are administered by the Commonwealth Finance Authority. As of this printing, approximately $30 million has been allocated to a variety of Pennsylvania solar projects

Through these avenues, the Pennsylvania Alternative Energy Investment Fund will advance clean, reliable and renewable energy from the sun and maintain the Commonwealth's leadership in energy production and environmental stewardship.

Each municipality has the opportunity to be a solar friendly community while simultaneously ensuring that solar energy systems are properly installed.

Here comes the Sun!

How Solar Works

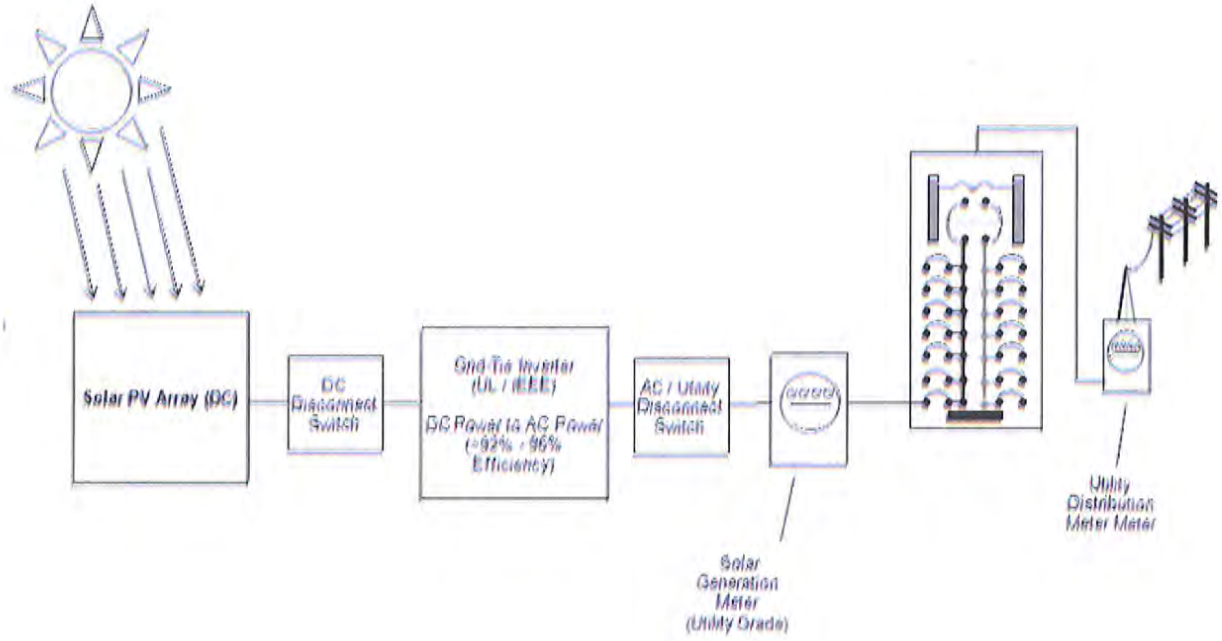
There are two major forms of solar energy technology: photovoltaic (PV) systems and solar thermal systems.

Solar Photovoltaic

Solar photovoltaic (PV) cells convert sunlight into electricity, powering everything from lamps to electronic devices and even electric cars. Contrary to popular belief, solar systems do not need strong sunlight to function properly and can be used effectively throughout Pennsylvania. Of course, stronger sun combined with days of sunlight increase system performance; however, solar PV can produce electricity even on cloudy days. The amount of solar energy or irradiance that shines on a building or area over a period of time is defined as insolation, which is included in weather data that is available for several cities in Pennsylvania. In order to estimate the annual electricity production of the solar PV system, it is important to know certain technical specifications of the solar PV system, the amount of annual insolation at the site, the orientation of the solar PV modules, and the shading impacts at the site from nearby obstructions. Shading impacts have a much greater affect on system performance than orientation of the solar PV modules, so conducting thorough shading analysis is important. Using solar shading assessment tools, such as using the Solar Pathfinder or the Solmetric Solar Eye have proven very effective for determining these impacts. Solar companies listed on DEP's website will be able to analyze these factors and provide advice on what a site is adequate for solar.

In solar PV systems, a flow of direct current (DC) electricity is produced when sunlight strikes an array of solar modules. Appliances and machinery, however, operate on alternating current (AC), such as the electricity supplied by a utility. The DC energy produced by the modules is, therefore, fed into an inverter that converts DC power into AC power and feeds into the main electrical panel that powers a home or business.

The majority of solar PV systems are grid-tied. This means they are directly connected to the power grid and do not require battery storage. Solar PV will not operate during a power outage unless it has battery backup. Solar electrical energy can provide power to a home or business, reducing the amount of power required from the utility; when the solar PV system power generation exceeds the power needs at the home or the business, then the surplus power automatically back feeds into the grid. A special utility meter will record the "net" power coming in from the utility and the surplus power flowing out from the solar PV system. The following depicts a simple one line diagram of a solar PV system interconnected to the grid.



Solar PV system can be installed on a roof, integrated into the building or roof structure or ground mounted on poles or racks. Tracking systems on poles enable the modules to follow the sun during the course of the day to increase overall output of the solar PV system.

The solar PV array capacity is rated in watts or kW (1 kW = 1,000 watts) in DC power output based on Standard Testing Conditions (STC), and is simply the sum of all the individual solar PV modules in the array. For example, 25 solar PV modules each rated at 200 watts DC make up a total solar PV system array size of 5 kW. The inverter, which converts the DC to AC power, also has a rated capacity in watts or kW, but it is based on the AC power output. Often the inverter AC capacity is numerically close to the DC array capacity, but in general, it should not be more than +/- 20% of the DC rated capacity. For example, the 5 kW DC rated solar PV array could have an inverter capacity rated between 4 kW to 6.3 kW AC. Regardless of the size of the solar PV array, the inverter will limit its output to a small percentage above the inverter AC rated capacity. The utility companies are interested in the inverter AC capacity more than the solar PV array DC capacity because it's the inverter that is interconnected into the utility grid.

Solar Thermal

Solar thermal systems use solar energy to typically heat a fluid, such as water or an antifreeze solution, or heat a gas, such as air. Solar thermal systems are most commonly utilized for heating residential hot water systems, though they are also used for space heating, spas or swimming pools, and even space cooling. Another type of solar thermal system technology utilizes concentrating solar power (CSP) to reach extremely high fluid temperatures in utility scale solar thermal plants to generate electricity. However, these large, central solar thermal power stations have been developed in the western U.S. and outside the country, where they work best with high beam solar radiation (compared to diffuse solar radiation) and are not considered commercially viable in the eastern U.S.

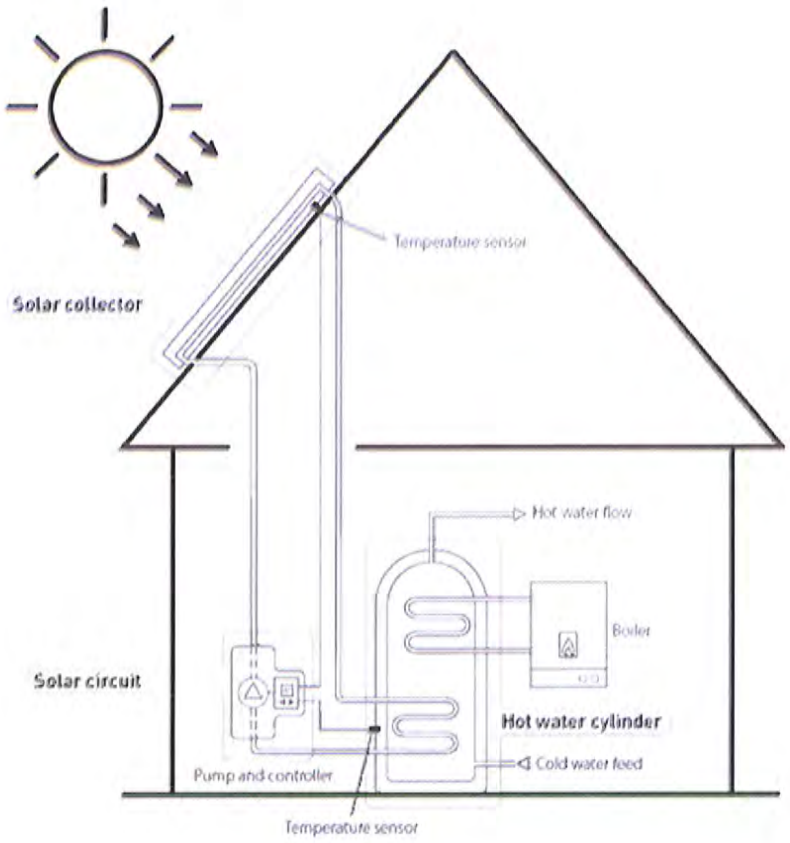
Solar water heating systems collect solar radiation from a flat plate collector or evacuated tubes. Most systems transfer the heat to a safe antifreeze solution, which is pumped into a solar heat storage tank to store each day's hot water supply. This is used as preheated water before using conventional energy to finish heating the water to a set temperature. Often solar thermal energy meets almost all the residential hot water needs in the summer months, requiring very little conventional energy for backup.

Solar water heating systems are most commonly roof mounted, but can also be installed on the side of a building or ground mounted on racks. A single 4' by 8' solar panel can potentially heat 20 gallons of water from 56 °F o 113 °F in 1 hour. In the summer, two solar panels with a storage tank can supply hot water for a family of five. Pools use unglazed collectors to circulate pool water directly and can increase temperature by 10 or 15 degrees depending on size of pool and other factors.

Active solar space heating systems are generally the most complicated type of the different solar thermal systems discussed above, except for the concentrating solar power plant. Depending on the type of solar heating system, it may use water or antifreeze, pipes, pumps and water storage tanks; or, it may use air, fans, air ducts and thermal mass storage in the form of rocks, concrete, water, or special paraffin or salts. Unfortunately, the down side to active solar space heating systems is that they are only useful during the cold months when heat is needed. However, it may be possible to utilize this technology to provide some space cooling relief through careful design.

It is important to note, however, that of all the solar thermal technologies described above, the Pennsylvania Sunshine Program only pays out rebates for solar water heating systems.

The following shows a simple closed-loop solar water heating system.



How Much Solar Systems Cost

PV Systems

Incentives offered through the Pennsylvania Sunshine Solar Program will reduce the purchase cost of a PV system by a maximum of 35%. Currently, the rebates are generally available to pay $2.25 per watt of DC capacity up to 10 kW for a residential solar PV system. Additionally, the federal Investment Tax Credit (ITC) allows for a 30% credit on federal income tax returns based on the entire installation cost, not just the incremental cost after the rebate. The cost of a PV system depends on a number of factors, including system size, equipment options and labor costs. Installed cost typically range from $7 to $9 per watt or more. For a 4 kW residential system, unsubsidized cost is estimated to be between $28,000 to $40,000 however, state rebates, tax credits, and the financial benefits from net metering and solar renewable energy credits will ***significantly*** bring down those costs. The PA Sunshine Program covers residential solar PV systems rated between 1 kW and 10 kW..

Commercial solar PV systems can range anywhere from 3 kW and above. PA Sunshine will pay rebates for solar PV systems rated between 3 kW and 200 kW, though rebate amounts depend on the system size. As a result, site and financing costs are wide-ranging and highly variable.

The rebate levels decline over time based on the accumulated blocks of solar PV capacity installed; refer to the PA Sunshine Program website (www.depweb.state.pa.us/pasunshine) for further information or current status of the rebate level.

It is worth noting that the price for solar PV modules has tumbled about 20% or more during 2009 which will make solar PV systems more cost effective.

Solar Water Heating

Incentives offered through the Pennsylvania Sunshine Solar Program for a residential system will reduce the purchase cost of a solar water heating system by matching 25% of the installation cost up to $2,000 or capped at 35% of the total project cost, whichever is less. For small commercial systems, the dollar cap amount is $20,000, or capped at 35% of the total project cost, whichever is less. The rebate levels decline over time based on based on the number of solar thermal systems installed. Refer to the PA Sunshine Program website (www.depweb.state.pa.us/pasunshine) for the all current rebate levels.

In addition to the PA Sunshine Solar Program rebate,the federal Investment Tax Credit (ITC) allows for a 30% credit, up to $2,000, on federal income tax returns.

Residential solar water heating systems are typically sized to provide 60% to 75% of annual domestic hot water needs. The majority of these systems install 64 or 80 square feet of collectors or evacuated tubes to match desired demand. Installed cost typically range from $100 to $175 per square foot of collector Area. For a 64 square foot collector with an 80-gallon storage tank, the unsubsidized cost is estimated to range between $6,000 and $11,000. As with PV systems, state rebates and tax credits will help ***significantly*** offset these costs.

Commercial solar thermal systems are custom engineered systems that provide heat for hot water systems, space heating, processing heat or even air conditioning through absorption chillers and desiccant cooling systems The installation costs of these systems are wide-ranging and highly variable.

Solar Pool Heating

Solar pool heating systems are economical and provide free heat for pool heating after the initial investment. Outdoor solar pool heating systems are typically sized at 50% of the overall pool area. The solar collectors are unglazed and lay directly on a roof or on ground mounted racks. When the pool requires heating, pool water is simply diverted to the collectors using the existing filter pump. Indoor pools, operating year round, are similar to commercial solar hot water systems and utilize closed loop design and antifreeze heat transfer fluids. While the installation cost of solar pool heating systems is dependent on various factors, costs generally range from $4,000 to $7,000. Solar pool heating or spa heating systems are not eligible for rebates under the PA. Sunshine Solar Program.

How Net Metering Works

Net metering is a mechanism that provides a simplified approach for interconnecting and metering on-site renewable generating facilities, such as a solar PV system. It allows customers to use excess solar electric generation to offset utility-purchased electricity on a monthly or annual basis.

As a solar PV system starts generating electricity, it first goes to meeting the on-site electric demand at the home or business, slowing down the power being supplied by the grid. It is very common that later on in the day the solar PV system may produce more power than what is needed at the site, , at which point the

"excess" electricity will automatically back feed through the bi-directional utility meter and onto the utility grid (Note: PECO Energy does not have bi-directional meters at this time and therefore requires two meters, one to be wired in reverse, to record this information; PECO Energy provides a reimbursement for the second meter installation cost). At the end of a month, if a customer uses more electricity than a solar system generates, the customer is charged for the difference on the customers' utility bill. However, if the customer generates more electricity than is needed during a given month, the excess is carried forward at full retail value towards the following month's bill. If the solar PV system generates more annual electricity than the annual electric usage by the home or business, then the customer receives payment for the annual surplus based on the *'Price to Compare'* for electric generation and transmission.

Note that PA state law and PA. PUC regulation requires all investor owned utilities to follow the net metering rules, but electric cooperatives and municipalities are not included in this requirement. Some electric cooperatives and municipalities do have net metering in their territories but they may differ from the regulated utilities.

Pennsylvania's net metering statewide regulation also includes Virtual Meter Aggregation, which allows one account holder with several accounts (meters) within a 2 mile radius, take full credit from surplus generation from a single on-site renewable generation system (i.e., solar PV system) interconnected to one account and apply it across all other accounts. This applies to farms, campuses, apartment complexes, houses, etc.

Alternative Energy Certificates

An Alternative Energy Certificate (AEC) is a tradable environmental commodity representing proof that 1 MWh (1,000 kWh) of electricity was generated from an eligible renewable energy resource. A solar AEC, also known as a solar renewable energy credit or SREC, certifies that the electricity was produced from a solar energy system, and is issued once a solar facility has generated 1 MWh of solar electricity through either estimated or actual metered production.

As an economic mechanism of Pennsylvania's Alternative Energy Portfolio Standard (AEPS), utilities can buy and sell SRECs on the market in order to fulfill their solar share requirements stipulated under the AEPS. SRECs are also designed to provide incentives for renewable energy marketers, private businesses and individuals to invest in the development of the solar energy industry in Pennsylvania.

SRECs are sold separately from generated power, and can be traded by individual entities or aggregated and sold through agreements with agents commonly known as "aggregators". Like any commodity, the price of SRECs is a function of supply and demand like most commodities. Even though the price of an SREC is set in the marketplace, some states place a cap on those prices.

The state of Pennsylvania currently utilizes the PJM-GATS credit registry to accurately and efficiently issue SRECs. Their website is www.pjm-eis.com .

Interconnection

Interconnection refers to interfacing a grid-tied solar PV system, or any other grid-tied generator, to the electric distribution company (i.e., grid). This configuration allows the solar PV system to operate in parallel with the grid. For small systems, the point of interconnection is through a circuit breaker on the main electric service panel, or it could be a supply tap on the service lines just before the main electric service panel.

A solar installer or electrician will work to interconnect a solar PV system by submitting an interconnection application and appropriate fees to the electric distribution company. There are four levels of interconnection under the Public Utility Commission's interconnection rules. Level 1 is the simplest and least expensive application and applies to certified inverter based systems up to and including 10 kW in size. Level 2, 3 and 4 are more detailed and expensive applications and apply to generating systems greater than 10 kW up and including 2 MW systems. The PUC's Final Rules can be easily located on their website at www.puc.state.pa.us ; under the electricity tab, click on "alternative energy" and scroll down to "interconnection" where there is the link to utility contacts for interconnection, agreement forms, application fees and the PUC's Final Rules (September 15, 2006).

Fire and Safety

All solar PV system components should have a UL or equivalent listing. Many quality solar products are manufactured in other countries that may have more established solar programs. There are several standards like UL that also meet OSHA and other fire and safety standards such as ETL and SE, which provide similar assurances as UL.

Developing guidance for the risk of fire is important to increase public safety for all structures equipped with solar energy systems. There is particular concern regarding roof-mounted solar systems, which can create limitations for firefighters to access, maneuver and specifically penetrate the roof to ventilate and suppress a building fire. Solar arrays are difficult and dangerous to cut through and time-consuming to move, therefore, in the face of a fire, solar systems can pose risks including shock and trip hazards.

States like California under their Office of the State Fire Marshal developed installation fire safety guidelines for PV solar systems. Guidelines like these could be applied in Pennsylvania and include

1. Marking – The guidelines specify that high-contrast, reflective and consistent wording should be used for all solar related conduit, electrical panels and disconnects.

2. Access, pathways and smoke-ventilation space – The fire marshal recommends that providing a 3-foot setback from the edges of roofline from gutter to ridge ensures that firefighters and access the roof in a quick and safe manner. A 3-foot setback along the roof's ridgeline is also recommended to provide the available space if there is a need to penetrate the roof to create ventilation.

3. Conduit runs – Chain saws are often employed to create vertical ventilation for fire suppression. Therefore, it is recommended that conduit runs should be kept 10-inches below roof decking to minimize the chance of being cut into.

Additional information on California's fire and safety guidelines can be obtained through:
http://www.osfm.fire.ca.gov/training/pdf/photovoltaics/solarphotovoltaicguideline.pdf

Model Solar Ordinance for Pennsylvania Municipalities

As part of the Governor's Solar Working Group, a model Solar Energy Systems Ordinance was developed for municipalities to amend into Pennsylvania local zoning ordinances. The purpose of the Solar Energy Systems Ordinance is to promote the use of solar energy and to provide for land planning, installation and construction of these systems subject to reasonable conditions that will protect the public health, safety and welfare of the community.

As solar energy systems become increasingly commonplace in local communities, the solar ordinance can provide significant legal structure for ensuring that the integration of solar systems into new and existing building construction and land development aligns with the regulations, goals and expectations of a specific municipality.

The model ordinance serves as framework for addressing the needs and concerns of solar energy systems. Consulting with a municipal solicitor is essential for ensuring that the model ordinance is appropriately tailored and incorporated into individual Zoning Ordinances.

Solar Energy Systems Ordinance

The Zoning Ordinance of _____ {municipality}, Ordinance No. _____, is amended by adding the following:

Section 1. Title:

This Chapter shall be known as the Solar Energy Systems Ordinance for _____{municipality}.

Section 2. Purpose:

The purpose of this Chapter is to promote the use of Solar Energy and to provide for the land planning, installation and construction of Solar Energy Systems in _____ {municipality} subject to reasonable conditions that will protect the public health, safety and welfare.

Section 3. Classification:

A. Solar Energy Systems shall be allowed in any zoning district and may be installed upon receipt of the necessary construction, electrical and/or mechanical permit(s). This ordinance applies to Solar Energy Systems to be installed and constructed for residential or commercial use.

B. Solar Energy Systems that are the primary use of a lot are governed by other sections of this zoning ordinance or the Land Planning Subdivision and Land Development Ordinance.

Section 4. Definitions:

"Solar Energy System" means any solar collector or other solar energy device, or any structural design feature, mounted on a building or on the ground, and whose primary purpose is to provide for the collection, storage and distribution of solar energy for space heating or cooling, for water heating or for electricity.

"Solar Energy" means radiant energy (direct, diffuse, and reflected) received from the sun.

Section 5. Applicability:

A. This ordinance applies to Solar Energy Systems to be installed and constructed after the effective date of the ordinance, and all applications for Solar Energy Systems on existing structures or property.

B. Solar Energy Systems constructed prior to the effective date of this ordinance shall not be required to meet the requirements of this ordinance.

C. Any upgrades, modifications or changes that materially alter the size or placement of an existing Solar Energy System shall comply with the provisions of this Chapter.

Section 6. Design and Installation:

A. To the extent applicable, the Solar Energy System shall comply with the Pennsylvania Uniform Construction Code, Act 45 of 1999 as amended and the regulations adopted by the Department of Labor and Industry.

B. The design of the Solar Energy System shall conform to applicable industry standards.

Section 7. Setbacks and Height Restrictions:

A. Solar Energy Systems may be installed as long as it meets the requirements of this Chapter and all other applicable construction codes.

B. Ground-mounted Solar Energy System

1. Solar Energy System must comply with all setback and height requirements for the zoning district where the Solar Energy System is installed.
2. All exterior electrical and/or plumbing lines must be buried below the surface of the ground and be placed in a conduit.
3. A ground-mounted Solar Energy System must comply with the accessory structure restrictions contained in the zoning district where the ground-mounted Solar Energy System is installed.

C. Roof mounted Solar Energy System.

1. A Solar Energy System shall conform to the height regulations of the zoning district where the Solar Energy System is installed.

D. Waivers

1. Upon request, the governing body may grant waivers of the setback or height requirements, provided that the waiver will not present any undue hardships on the adjoining property.

2. The governing body shall take into consideration the support or opposition of adjacent property owners in granting waivers of setback or height requirements.

Section 8. Effective Date:

This ordinance shall take effect _____.

Permits

Permit fees will vary across the state.

The permitting process offers a valuable opportunity to ensure that solar energy systems are meeting baseline requirements, such as the National Electrical Code. A system installer can use the permitting process to

inform the municipality about the solar system and demonstrate that installation will meet fire, safety and electrical standards.

Municipalities may want to request solar installers to include a list of the proposed equipment to be used, specifications, a site plan, and one-line wiring diagram as part of the permit process. The more information that is provided upfront, the easier it is for the installer to communicate with the local inspector and more cost effective to change the system design before any hardware is purchased and installed.

Inspections

Under the PA Sunshine Solar Program rules, DEP will perform inspections of at least 10 percent of all installations. A code official and/or electrical inspector will typically perform the electrical inspection for compliance with the National Electric Code (NEC) along with any required building inspections. If the solar system is grid-connected, the local utility company may also require inspection prior to activating the system or require documentation from the solar installer.

To ensure that a solar energy system passes inspection and is properly installed, contracting with an approved installer is critical to ensure consumer protection. In administering the PA Sunshine Solar Program, DEP has developed an approved list of solar system installers.

Criteria for DEP Approved Solar Installers

Whether or not a home or business is applying to the PA Sunshine, DEP's installer requirements serve as valuable guidance for selecting an installer.

An approved PV or solar thermal installer is one who meets or exceeds one of the following requirements:

1. Is certified by the North American Board of Certified Energy Practitioners (NABCEP).
2. Has completed an Interstate Renewable Energy Council (IREC) Institute for Sustainable Power Quality (ISPQ) accredited PV training program or a PV manufacturer's training program and successfully installed a minimum of three PV systems.

In addition to meeting the criteria, DEP requires that installers:

1. Be in good standing as evidenced by favorable reports from three customer references and no negative reports from the Better Business Bureau.
2. Up to date Commercial General Liability Insurance with bodily injury and property damage combined single limit of liability of at least $1,000,000 for any occurrence.
3. Carry Workers Compensation Insurance for all employees of the company.

Frequently Asked Questions

Q. ***Why should I go Solar?***

A. There are many reasons, here are just a few:

- Solar energy finance experts suggest that every 1,000 Watts of power from PV modules could add resale value to your home.
- Solar systems are extremely reliable, able to produce clean energy from the sun for at least 25 years.
- Dramatically reduce your carbon footprint, help your community clean its air, help provide grid stability and reliability as well as reduce our dependence on foreign energy sources.
- Incentives are now at their highest level in Pennsylvania and will decline as more systems are installed.
- Once the cost of the system is paid, the energy it generates is free. Solar energy is, therefore, a hedge against increasing energy costs.
- There are federal tax credits that many consumers can take advantage of to further lower the cost of a system at this time.

Q. ***How much money will I save on my electric bill?***

A. The potential savings from a solar system depends on several factors, including your current utility rate structure and your usage, the size of the solar system and the amount of sunshine your system receives. A certified solar installer should be able to provide you with an estimate.

Q. ***What size solar system do I need?***

A. Several factors will influence the size of your solar system. Determining your present electricity need is the first step in sizing your solar system and determining your budget. Completing an energy efficiency audit of your home or business and integrating energy efficiency measures before you decide to install solar may affect the size of the system you install. In addition, making improvements to the energy efficiency of your home or business will improve the comfort level of your home or building while reducing energy bills.

Residential solar PV systems are typically 2 to 5 kW (DC) in size, but many systems up to 10 kW or more are also being installed. Within Pennsylvania, the legal size limitation for a Residential solar PV system is 50 kW per electric account or point of interconnection at the utility meter. In Pennsylvania, a solar PV system will conservatively produce on average 1,000 kWh (AC) of electricity per year for each 1 kW (DC) installed in a fixed orientation. However, it is very possible to generate over 1,200 kWh per year if the solar PV array has optimum orientation, has no shading impacts or is a tracking system which follows the path of the sun throughout the day. The size of a typical solar PV module is roughly 3 or 4 feet wide by over 5 feet high, with a rated capacity ranging from 150 watts to over 300 watts. The solar array may conservatively take up about 100 square feet of roof area per 1 kW of DC capacity, but depending on the efficiency of the solar PV modules, the area can range from 150 square feet down to 60 square feet per kW of DC capacity.

Therefore, given the average Pennsylvania residential household consumes about 10,000 kWh of electricity per year; the size of a solar PV system to meet all of the annual usage would range from about 8 kW to 10 kW in DC capacity.

Q. ***Are PV systems reliable?***

A. Yes. Stationary PV systems have no moving parts; therefore, there is nothing mechanical that will deteriorate. They operate silently, and require no fuel, filters or other costly parts or maintenance. The most common solar modules are constructed of silicon cells (similar to a computer chip) embedded inside a protective layer, such as sturdy tempered glass. They are made to withstand hot, direct sunlight and harsh weather conditions, such as snow and hail storms, and will continue to work as long as sunlight falls on the surface. They do need to be cleaned periodically to ensure maximum performance—dust and dirt can reduce a system's performance. Solar systems usually have an expected life of up to 25 years. Systems receiving incentives under the Pennsylvania Sunshine Program are required to have at least a 10-year equipment warranty.

Q. ***Which solar technologies are covered under the Pennsylvania Sunshine Program?***

A. Incentives are available for solar photovoltaic (PV) technologies (roof-mounted, ground-mounted and building-integrated PV), and solar thermal systems. In addition, customers may be eligible for incentives under the Solar Water Heating Pilot Program. Please see the useful link section for additional information.

Q. ***What applications will not be covered under the rebate program?***

A. Solar systems for swimming pools and spas will not be covered under any of PA's solar rebates or grant programs. In addition, generally, non-grid tied systems that run on batteries will only be considered for a rebate under certain circumstances. Contact DEP before installing to see if the system qualifies.

Also it will be important that your installer is familiar with all the guidelines in order to qualify for a rebate.

Q. ***How long do solar systems last?***

A. *PV solar panels are usually warranted for 25 years and some systems last even longer.*

Q. ***How long does a solar thermal system last?***

A. Three year warranties are fairly standard for solar thermal systems. Under the PA Sunshine Program, 10-year warranties are required for solar thermal collectors.

Q. ***How much are application fees?***

A. DEP application fees are $100 per application for residential applications and $150 for commercial applications, These fees are non-refundable..

Q. ***How can I check on the status of my application?***

A. Your installer can provide you with regular updates regarding the status of your application. You can also review details of your application online at http://csi.powerclerk.com.

Q. ***How long will the application process take?***

A. The Pennsylvania Sunshine Program Administrators target less than 30 days to confirm both residential and non-residential reservation requests. To help ensure your application is processed quickly, please take a

minute to review your documents before filing them with the Department of Environmental Protection to ensure it is complete.

Q. ***Must I go on a time-of-use (TOU) rate as a condition of participating in the Pennsylvania Sunshine Program?***

A. Pennsylvania Sunshine Program applicants are not currently required to use TOU rates unless required by other terms of their service. However, many customers benefit from TOU rates because solar production in the middle of the day generates electricity during peak periods when TOU customers rates are the highest . Customers should ask their solar installer and utility if TOU is available and is beneficial.

Q. ***When I get my solar system installed, will I be off the grid"?***

A. No. The Pennsylvania Sunshine Program provides incentives only for grid-tied solar systems. When a system produces more power than the customer is using, the excess flows into the grid. When the customer's electricity use is more than the solar system produces, the customer automatically gets power from the grid.

Q. Do I need a battery backup for my solar electric generating system?

A. A battery backup for your solar system is unnecessary when your system is connected to your utility's electric grid. The grid serves as a backup during times when your system is not producing electricity, for example, at night and on very cloudy days.

Q. ***What happens during a power outage?***

A. Your solar electric system is designed to shutdown immediately in a power outage for safety reasons, unless it includes a battery storage system.

Q. ***Can my city, homeowners association or neighbor prohibit me from installing solar on my roof?***

A. Check with your township for specific rules that apply in your community. In particular, some homeowners associations have rules governing property that may restrict solar.

Q. ***Is the power produced by the solar system any different from the utility power? Will it hurt my home appliances or business equipment?***

A. No. The electricity generated by your solar system is no different from electricity delivered by your local utility. The solar system connects directly to your utility module or circuit breaker box, so it interfaces seamlessly with your utility power.

Q. ***Does a solar PV system have to meet local building codes?***

A. Yes. You will probably need to obtain a permit from the municipality, or city. You may be required to purchase a building permit and/or electrical permit before you can begin installation. Most solar installers should be able to assist you with local permitting issues.

Q. ***Can I install a solar PV system myself?***

A. Not and receive a rebate from the Pennsylvania Sunshine Program.

Q. *Where can I get more information*?

A. There are so many solar sites on the web too numerous to mention here but here are a few key sites:

Pennsylvania Public Utility Commission - http://www.puc.state.pa.us

Pennsylvania Department of Environmental Protection – http://www.depweb.state.pa.us/

Clean Power Markets, Inc. – http://www.cleanpowermarkets.com/

The Solar Alliance – http://www.solaralliance.org/

Mid-Atlantic Solar Energy Industries Association – http://www.mseia.net/

Solar Energy Industries Associate – http://www.seia.org/

PJM Environmental Information Services, Inc. – http://www.pjm-eis.com/

United States Department of Energy – http://www.energy.gov/

Pennsylvania Commonwealth Finance Authority – http://www.newpa/commonwealth-financing-authority

Glossary of Commonly Used Terms

A

Alternating Current (AC): Alternating current is an electric current whose direction reverses cyclically, as opposed to direct current (DC), whose direction remains constant. AC is the form of electricity that is delivered to your home or business. Solar photovoltaic (PV) systems produce DC power, which must be converted to AC by an inverter.

Array: Any number of electrically connected photovoltaic (PV) modules providing a single electrical output.

Azimuth: Azimuth is the horizontal angular distance between the vertical plane containing a point in the sky and true south. All references to azimuth within the Pennsylvania Sunshine Program, unless expressly stated otherwise, refer to true, not magnetic, azimuth.

B

Building Integrated Photovoltaic (BIPV): BIPV technologies form part of the structure to which they are affixed. Typically integrated into the roofing system, BIPV products can provide architectural interest and/or a very unobtrusive installation.

C

Capacity Factor: The capacity factor for an electricity generating unit is the ratio of the energy produced during a given time period, measured in kilowatt-hours (kWh), to the energy the unit could have produced if it had been operating at its rated capacity during that period :

$$\text{Capacity factor} = \frac{\text{Actual Solar PV System Generation (kWh)}_{\text{Period}}}{\text{Rated generating capacity (kW) x period (in hours)}}$$

Capacity Rating: The rating given to a PV system by its manufacturer denoting the load the system is able to meet or supply when operating at full capacity. For a solar PV system, this will occur when the system is in direct sunlight with no shade.

Conversion Efficiency: The amount of the sun's energy that a solar cell can convert into electricity; the balance is lost as heat or reflected light.

D

Direct Current (DC): Solar PV systems produce electricity in direct current (DC), which is defined as the continuous flow of electricity through a conductor. In DC, electricity always flows in the same direction, which

distinguishes it from alternating current (AC). Solar PV systems produce DC power, which must be converted to AC by an inverter in order to power household appliances.

I

Insolation: The amount of solar energy that shines on a building or area, equivalent to energy and usually expressed in annual kilowatt-hours per square meter.

Interconnection Agreement: A legal document between the customer and their electric utility authorizing the connection of the customer's solar system to the utility's grid. This agreement is required prior to receiving a Pennsylvania Sunshine Program incentive payment, unless it is an approved off-grid application.

Interval Data Recorder (IDR): An Interval Data Recorder is a metering device that stores data on energy production, usually in hourly or 15-minute intervals.

Inverter: A device that converts direct current (DC) electricity produced by a solar system into the alternating current (AC) electricity that can be used in a home or building. Some energy is lost when this conversion takes place.

Inverter Efficiency: The AC power output of the inverter divided by the DC power input. Inverter efficiency is lowest when operating at low loads; thus, it is important to select inverter(s) of the proper size relative to the PV array. Grid tied inverters typically have a rated efficiency ranging between 92% and 96%.

K

Kilowatt (kW): A unit of electrical power equal to 1,000 Watts, which constitutes the basic unit of electrical demand. The Watt is a metric measurement of power (not energy) and is the rate (not the duration) at which electricity is used. 1,000 kW is equal to 1 megawatt (MW).

Kilowatt-Hour (kWh): A unit of electrical energy, equivalent to the use of 1 kilowatt of electricity for one full hour. Utilities measure customers' electric energy usage on the basis of kilowatt-hours, and electricity rates are most commonly expressed in cents per kilowatt-hour..

L

Load: The amount of power carried by a utility system or the amount of power consumed by an electric customer at a specific time. Base load is the minimum constant level of electricity required by utility customers; peak load is the amount of electricity required at the time of greatest demand.

M

Megawatt (MW): Unit of electric power equal to 1,000 kW, or 1 million Watts.

Meter: A device used to measure and record the amount of electricity used or generated by a consumer.

Modules:A module is the smallest protected assembly of interconnected PV cells. Applicable modules are typically rated between 150 Watts and over 300 Watts.

N

Net Metering Agreement: An agreement with the local utility that allows customers to receive a credit at the retail price of electricity for surplus electricity generated by certain renewable energy systems. Under net metering, the electric meter runs backward as a customer's solar system generates surplus electricity.

O

Orientation: A term used to describe the direction that the surface of a solar module faces. The two components of orientation are the tilt angle (the angle of inclination a module makes from the horizontal) and the azimuth (based on true South, not magnetic North/South).

P

Photovoltaic (PV): The technology that uses a semiconductor to convert light directly into electricity.

Power Conversion Efficiency: The ratio of output power to input power of the inverter
Power Purchase Agreements (PPA): A contract to purchase energy. PPAs are usually established between a power plant and a purchaser of electrical energy, such as a utility.A PPA may be a contract written between a building owner that wants to use solar energy and a third-party developer who will install, maintain and own the PV system used to generate the electricity on the building's structure, then sell the solar energy produced by the system to the building owner at a pre-determined rate.

Program Administrator (PA): Program Administrator refers to Department of Environmental Protection (DEP), who performs administration of the PA Sunshine Solar Program under the auspices of the Commonwealth Finance Authority (CFA).

R

Renewable Energy Credits (RECs): Renewable energy certificates (RECs), also known in Pennsylvania as alternative energy credits (AECs) represent the environmental attributes of the power produced from renewable energy projects. By installing a renewable energy system (such as solar), you become the owner of these environmental attributes, or RECs. They have value in the marketplace. Ask your solar installer about how to sell your credits which, in most cases, will help reduce the cost of your system.

S

Silicon: A chemical element (Si) that is the most common semi-conductor material used to make solar PV cells.

Solar Irradiance: Radiant energy emitted by the sun, particularly electromagnetic energy.

Solar Pathfinder: A device used in PV site assessment for charting the sun's path through the sky for all months of the year, calibrated by the hours of the day. Also provides other critical, detailed site data.

Solar Thermal: The process of concentrating sunlight on a relatively small area to create the high temperatures needed to vaporize water or other fluids to drive a turbine for generation of electric power, heat water for domestic or industrial hot water, or space conditioning (heating or cooling). Pennsylvania Sunshine Program is the first state in the country to have a state-wide rebate program for solar hot water systems. .

System Installer: Installers need to be approved in order to participate in the PA Sunshine Program. A list of approved installers can be found on the DEP website. Installers need to meet certain criteria before being listed.

Solar Renewable Energy Credits (SRECs): Alternative energy credits (AECs) or renewable energy credits (RECs) which are specifically generated from a solar electric or solar thermal system.

T

Time-of-Use (TOU) Meter: An electric meter that measures and records the times when a customer consumes or generates electricity, during utility defined on-peak and off-peak priods,. This type of meter is used for customers who are on time-of-use rates.

Time-of-Use (TOU) Rates: Electricity prices that vary depending on the time period in which the energy is consumed or produced. In a time-of-use rate structure, higher prices are charged during utility peak-load times. Such rates can provide an incentive for consumers to curb power use during peak times. Solar PV modules tend to produce power during peak times, so they have high value when used in conjunction with time-of-use rates.

Tracker or Tracking Array: A number of PV modules mounted such that they track the movement of the sun across the sky to maximize energy production, either with a single-axis or dual-axis mechanism.

W

Warranty: In the Pennsylvania Sunshine Program, the solar PV systems must have a 5 year labor warranty, including 5 year and 20 year equipment warrantles for the inverters and PV modules, respectively. For the solar thermal systems, the labor warranty must be 3 years, and the equipment warranty for the solar panels must be 10 years.

Watt: A unit of measurement of electric power, named after physics pioneer James Watt.

Watt-hour (Wh): A unit of energy measurement, equal to one Watt of power used for one hour.

CONCORD TOWNSHIP

ORDINANCE NO. ___

AN ORDINANCE AMENDING THE CODE OF THE TOWNSHIP OF CONCORD BY AMENDING CHAPTER 210 THEREOF, ZONING, BY ADDING A NEW ARTICLE XXXIV – RENEWABLE ENGERY FACLITIES, TO PERMIT SOLAR ENERGY FACILITIES AS A USE BY RIGHT OR A SPECIAL EXCPETION AND TO PERMIT WIND ENERGY FACILITIES AS A SPECIAL EXCPETION, ESTABLISHING REGULATIONS THEREFORE; AND AMENDING ARTICLE XIXA TO REQUIRE HISTORIC RESOURCE STUDIES FOR SOLAR AND WIND ENERGY FACILITIES

The Board of Supervisors of Concord Township, Delaware County, Pennsylvania does hereby enact and ordain that the Code of Concord Township enacted February 1, 1994, as heretofore amended, is amended as follows:

ARTICLE XXXIV
Renewable Energy Facilities

§ 210-290. Purpose.

A. This renewable energy article is designed to:

(1) Accommodate the need for solar and wind energy facilities while regulating their location, installation and number in the Township;

(2) Minimize adverse visual effects through careful design, siting and screening; and

(3) Avoid potential damage to structures and adjacent properties through proper engineering design and siting.

§ 210-291. Definition of Terms.

For the purposes of this article, the following words, terms and phrases shall have the meanings indicated herein:

ARRAY AREA – The area of the entire solar field, measured from the outside of all solar panels.

FALL ZONE – The distance which the blades may travel if the blades become detached in whole or in part from the wind turbine.

SOLAR ENERGY FACILITY – An electric generating facility, whose main purpose is to supply electricity, consisting of one or more solar panels and other ancillary associated buildings and structures, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities. Provides electricity primarily for on-site use, though not prohibiting the sale of excess electricity generated from time to time to the utility company.

TURBINE HEIGHT – The distance measured from the surface of the tower foundation or roof mounting to the highest point of the turbine rotor blade.

WIND ENERGY FACILITY – An electric generating facility, whose main purpose is to supply electricity, consisting of one (1) wind turbine and other accessory structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities. Provides electricity primarily for on-site use, though not prohibiting the sale of excess electricity generated from time to time to the utility company.

WIND TURBINE – A wind energy conversion system that converts wind energy into electricity through the use of a wind turbine generator, and includes the nacelle, rotor, tower and pad transformer, if any.

§ 210-292. Solar Energy Facility – Use, area, siting and height requirements.

A. A solar energy facility shall be permitted as an accessory structure and the generation of electricity shall be permitted as an accessory use in all zoning districts when the array area is less than or equal to 1,000 square feet. A solar energy facility shall be permitted as a special exception in all zoning districts when the array area is greater than 1,000 square feet.

B. The array area, any ground-mounted equipment and all other appurtenant structures and facilities shall meet the required setbacks for the zoning district in which the tract is located.

C. All solar energy facilities, including any ground-mounted equipment or other appurtenant equipment shall be located to the rear of the principal permitted structure.

D. When installed on the roof of a building, no solar energy facility shall cover more than 50% of the roof area.

E. No solar energy facility shall cover more than 30% of the tract area.

F. All structure-mounted solar energy facilities shall be located on the rear portion of the structure, such that it is not visible from the front and is not higher than the peak of the roof. An applicant may utilize the front portion of the structure only if the applicant is able to demonstrate that no other alternative is feasible, including ground-mounted array areas, to the satisfaction of the Codes Enforcement Officer, or, in the case of a special exception, the Zoning Hearing Board.

G. A solar energy facility may not be located on a building or structure that is listed on the Township's Historic Resources Map nor on any tract that contains a building or structure that is listed on the Township's Historic Resources Map unless an Historic Resource Study is completed in accordance with §210-183.10.

§ 210-293. Solar Energy Facility – Permitting Requirements; additional design standards.

A. A building and zoning permit shall be required for each solar energy facility. The building and zoning permit shall include, along with all other documentation, information, exhibits and fees elsewhere required by the Township, the following:

(1) A plan, prepared by a Pennsylvania-registered Professional Engineer, indicating the location of all existing and proposed facilities on the subject tract, property limits, required setbacks, utility locations and locations of any ground-mounted equipment;

(2) Calculations indicating both the existing and proposed building coverage and impervious coverage for the subject tract;

(3) A narrative addressing how the proposed facility's impacts will be minimized for the surrounding properties. This should include, at a minimum, information regarding site selection, facility design or appearance, similarity in color and appearance to the existing structure, buffering and screening of ground-mounted equipment;

(4) Calculations indicating the percentage of roof coverage;

(5) Structural analysis, prepared by a Pennsylvania-registered Professional Engineer, addressing the effect of all structure-mounted apparatus on the existing structure;

(6) Acknowledgement by the property owner of the possible effects of any proposed structure-mounted apparatus to existing warranties (i.e., shingles);

(7) Approval by the Homeowners' Association (HOA), or similar such body, where one is present; and

(8) A glare study, completed in accordance with industry standards, shall be submitted.

B. All solar energy facilities shall be located so as to:

(1) Not cast a glare upon any neighboring properties or any public or private street;

(2) Minimize visual impact to neighboring properties;

(3) Not create any additional heat load upon neighboring properties; and

(4) Not be located immediately adjacent to a swimming pool or any other open body of water.

C. All solar energy facilities shall comply with the Pennsylvania Uniform Construction Code, as amended.

D. All transmission, power or other utility lines shall be located underground.

E. Solar energy facilities shall not display advertising, except for reasonable identification of the facility manufacturer.

F. All structure-mounted facilities shall be of similar appearance in color and material as the existing structure.

G. All ground-mounted facilities shall meet the requirements of Chapter 148 of the Code of Concord Township in regards to stormwater management and erosion and sediment control.

§ 210-294. Wind Energy Facility – Use, area, siting and height requirements.

A. A wind energy facility shall be permitted as a special exception in all zoning districts.

B. There shall be no more than one (1) wind turbine per tract for tracts up to five (5) acres (gross); for tracts greater than five (5) acres (gross), one (1) wind turbine may be installed for each five (5) acres of tract area (gross).

C. The maximum turbine height for ground-mounted facilities shall not exceed the maximum height of buildings and other structures permitted within the zoning district of the subject tract, exclusive of cellular communications towers; in the case of roof-mounted wind energy facilities, the maximum turbine height shall not exceed eight (8) feet, as measured from the roof mounting location, and at no time shall turbine height exceed the maximum zoning height in the zoning district.

D. No wind energy facility shall be located in a front yard.

E. The wind turbine and all appurtenant structures, equipment or similar shall be located within the setbacks of the zoning district of the subject tract.

F. All wind turbines shall be self-supporting upon its foundations, without the aid of guy wires, or similar.

G. No wind turbine shall be located closer to a property line, occupied structure, overhead utility or fuel source than the distance measured by its height plus twenty-five percent (25%) of its height.

H. A wind turbine blade, at its lowest point, shall be no closer to the surface of the ground than fifteen (15) feet.

I. A wind energy facility may not be located on a building or structure that is listed on the Township's Historic Resources Map nor on any tract that contains a building or structure that is listed on the Township's Historic Resources Map unless an Historic Resource Study is completed in accordance with §210-183.10. Further, no wind energy facility shall be located any closer than two hundred (200) feet of any such building or structure.

§ 210-295. Wind Energy Facility – Permitting Requirements; additional design standards.

A. A building and zoning permit shall be required for each wind energy facility. The building and zoning permit shall include, along with all other documentation, information, exhibits and fees elsewhere required by the Township, the following:

(1) A plan, prepared by a Pennsylvania-registered Professional Engineer, indicating the location of all existing and proposed facilities on the subject tract, property limits, required setbacks, utility locations, fall zone, all wires and overhead structures and locations of any ground-mounted equipment;

(2) Said plan shall verify no utility lines or other facilities are located within the fall zone, except those required for the proper operation of the wind turbine.

(3) Identities of adjacent property owners.

(4) Location of all man-made structures within 200 feet of the subject tract.

(5) Soil type(s) where the foundation will be constructed.

(6) Complete structural and construction details, including narrative descriptions, demonstrating how the foundation, support and other parts of the wind turbine will be constructed, installed and maintained, together with the safety features proposed to prohibit unauthorized access; if roof-mounted, a structural analysis, prepared by a Pennsylvania-registered Professional Engineer, addressing the effect of all structure-mounted apparatus on the existing structure shall be provided.

(7) Information regarding the speed of operation and the braking mechanism(s). No wind turbines shall be permitted which lack an automatic braking, governing or feathering system to prevent uncontrolled rotation, over speeding and/or excessive pressure on the wind turbine or any of its component parts.

(8) Approval by the Homeowners' Association (HOA), or similar such body, where one is present.

(9) Decommissioning information as required in §210-297.D as well as a signed form by the property owner acknowledging the decommissioning procedures identified in §210-297.

B. The proposed location of the wind turbine shall be demonstrated to protect and maintain existing view sheds of the subject property and those of surrounding properties. In addition, the design color and other visual features of the wind turbine shall be designed and installed in such a manner so as to create the least visual and audio impacts practicable. The applicant shall demonstrate compliance with this section, by among other things, providing photographic perspectives of the proposed site from all sides of the property, adjacent road ways and neighboring properties (with permission of the owners).

C. The proposed location and operation of the wind turbine shall be demonstrated not to interfere with any broadcast, radio, wireless or other telecommunication signals or facilities. In all cases, the location of a wind turbine shall be clear of and shall not interfere with any existing trees, structures, wires and the like.

D. All transmission, power or other utility lines shall be located underground.

E. Audible sound from a wind energy facility shall not exceed fifty-five (55) dBA, as measured at the exterior of any occupied building on any adjacent property. Methods for measuring and reporting acoustic emissions from wind turbines shall be equal to or exceed the minimum standards for precision described in AWEA Standard 2.1 – 1989 titled *Procedures for the Measurement and Reporting of Acoustic Emissions from Wind Turbine Generation Systems Volume 1: I First Tier.*

F. Wind energy facilities shall not display advertising, except for reasonable identification of the facility manufacturer.

G. No antennae, cellular communication facilities or other items or material are permitted to be mounted or otherwise placed on the wind turbine.

H. No lighting of wind turbines is permitted except the minimum required for safety.

I. All wind energy facilities shall comply with the Pennsylvania Uniform Construction Code, as amended.

J. Access to a wind turbine shall not be provided any closer to the surface of the ground than fifteen (15) feet.

K. Caution signs shall be installed warning of ice and blade throws at a location determined by the manufacturer. Signs shall be placed at 100-foot intervals, at each property line, no lower than three (3) feet height between one (1) and two (2) square feet in size

reading CAUTION: FALLING OBJECTS. Each name shall also contain the name and address of the property owner.

§ 210-296. Solar and Wind Energy Facility – Special exception provisions.

A. In addition to the requirements of Article XXVIII, a special exception for a solar or wind energy facility shall not be granted except upon compliance of the following:
   (1) Submission of all of the required information required above.
   (2) Submission of a landscape plan, prepared by a Pennsylvania-registered Landscape Architect indicating appropriate screening for the proposed facility.

B. Any solar or wind energy facility requiring a special exception shall require land development approval pursuant to the provisions of the Subdivision and Land development Chapter of the Code.

C. Any solar or wind energy facility requiring a special exception shall require a building and zoning permit as required within Article XXXIV.

D. All conditions of any special exception granted by the Township shall be obligations of any succeeding owners of the property. To assist with this subsection, any special exception permitting a solar or wind energy facility shall be recorded by the Applicant, verbatim against the property in the County Office of the Recorder of Deeds. In addition, any change in ownership of the property shall be registered with the Township within thirty (30) days of said change in ownership.

§ 210-297. Solar and Wind Energy Facilities – Maintenance and abandonment; decommissioning.

A. All solar and wind energy facilities shall be maintained and kept in good order and repair and in compliance with all applicable state requirements and the Code of the Township.

B. The owner or operator shall, at its expense, complete decommissioning of the wind energy facility within (12) twelve months after the end of the useful life of the facility. The wind energy facility will presume to be at the end of its useful life if no electricity is generated for a continuous period of twelve (12) months.

C. Decommissioning shall include removal of wind turbines, buildings, cabling, electrical components, roads, foundations to a depth of 36 inches, and any other associated facilities. Disturbed earth shall be graded and re-seeded.

D. An independent and certified Professional Engineer shall be retained to estimate the total cost of decommissioning ("decommissioning costs") without regard to salvage value of the equipment, and the cost of decommissioning net salvage value of the equipment

("net decommissioning costs"). Said estimate shall be submitted to the Township with the initial application.

E. The owner or operator shall post and maintain decommissioning funds in an amount equal to net decommissioning costs; provided, that at no point shall decommissioning funds be less than twenty five percent (25%) of decommissioning costs. The decommissioning funds shall be posted and maintained with a bonding company or lending institution chosen by the owner or operator, provided that the bonding company or lending institution is authorized to conduct such business within the Commonwealth and is approved by the Township.

F. Decommissioning funds may be in the form of a performance bond, surety bond, letter of credit, corporate guarantee or other form of financial assurance as may be acceptable to the Township.

G. If the owner or operator fails to complete decommissioning within the period prescribed above then the landowner, if different from the owner or operator shall have six (6) months to complete decommissioning.

H. If neither the owner or operator nor landowner complete decommissioning within the periods prescribed above, then the Township may take such measures as necessary to complete decommissioning. The entry into and submission of evidence of a participating landowner agreement to the Township shall constitute agreement and consent of the parties to the agreement, their respective heirs, successors and assigns that the Township may take such action as necessary to implement the decommissioning plan.

I. The escrow agent shall release the decommissioning funds when the owner or operator has demonstrated and the municipality concurs that decommissioning has been satisfactorily completed, or upon written approval of the municipality in order to implement the decommissioning plan.

ARTICLE XIXA
Historic Preservation

§210-183.10.A.(4) Any wind or solar energy facility located on a building or structure that is listed on the Township's Historic Resources Map or on any tract that contains a building or structure that is listed on the Township's Historic Resources Map in accordance with Article XXXIV.

ENACTED and ORDAINED this _____ day of _____ 2011.

TOWNSHIP BOARD OF SUPERVISORS

_____

_____

_____

_____

_____

Attest: _____
Secretary

MONROE COUNTY, PENNSYLVANIA
MODEL ORDINANCE FOR
ON-SITE USAGE OF SOLAR ENERGY SYSTEMS

Township/Borough of [*Municipality name*]
Monroe County, Pennsylvania

ORDINANCE NO. --------

AN ORDINANCE TO AMEND THE ZONING ORDINANCE OF [*MUNICIPALITY NAME*], BY AMENDING [*ARTICLE/SECTION*], DEFINITIONS, BY ADDING DEFINTIONS FOR SOLAR ENERGY SYSTEMS AND BY AMENDING [*ARTICLE/SECTION*], ADDING A NEW SECTION TO PERMIT SOLAR ENERGY SYSTEMS AS AN ACCESSORY TO PERMITTED, CONDITIONAL AND SPECIAL EXCEPTION USES IN ANY ZONING DISTRICT.

BE IT HEREBY ENACTED AND ORDAINED by the [*Governing Body*] of [*Municipality name*], Monroe County, Pennsylvania, that the [*Municipal*] Zoning Ordinance, shall be amended in the following respects:

Section 1. The Zoning Ordinance of [*Municipality name*] [*Section/Article*], Definitions, shall be amended to include the following definitions:

Mechanical Equipment: Any device associated with a solar energy system, such as an outdoor electrical unit/control box, that transfers the energy from the solar energy system to the intended on-site structure.

Solar Access: A property owner's right to have sunlight shine on the owner's land. (*The enforcement of this right is through the zoning ordinance that establishes height and setback requirements.*)

Solar Energy System: An energy conversion system, including appurtenances, which converts solar energy to a usable form of energy to meet all or part of the energy requirements of the on-site user. This definition shall include the terms passive solar and active solar systems.

Solar Glare: The effect produced by light reflecting from a solar panel with an intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.

Section 2. Applicability:

1. This ordinance applies to solar energy systems to be installed and constructed after the effective date of the ordinance.

2. Solar energy systems constructed prior to the effective date of this ordinance shall not be required to meet the requirements of this ordinance.

3. Any upgrade, modification, or structural change that materially alters the size or placement of an existing solar energy system shall comply with the provisions of [*Section/Article*].

Section 3. The Zoning Ordinance of [*Municipality name*], [*Section/Article*], Accessory Regulations, shall be amended by adding [*Section/Article#*] as follows:

SOLAR ENERGY SYSTEMS

It is the purpose of this regulation to promote the safe, effective and efficient use of solar energy systems installed to reduce the on-site consumption of utility supplied energy and/or hot water as a permitted accessory use while protecting the health, safety and welfare of adjacent and surrounding land uses through appropriate zoning and land use controls. A solar energy system shall be permitted in any zoning district as an accessory to a principal use herein and subject to specific criteria as set forth below. Where said general standards and specific criteria overlap, the specific criteria shall supersede the general standards.

1. The installation and construction of a solar energy system shall be subject to the following development and design standards:

    A. A solar energy system is permitted in all zoning districts as an accessory to a principal use.

    B. A solar energy system shall provide power for the principal use and/or accessory use of the property on which the solar energy system is located and shall not be used for the generation of power for the sale of energy to other users, although this provision shall not be interpreted to prohibit the sale of excess power generated from time to time to the local utility company.

    C. A solar energy system connected to the utility grid shall provide written authorization from the local utility company to the [*Township/Borough*] acknowledging and approving such connection.

    D. A solar energy system may be roof mounted [*attachment #1*] or ground mounted [*attachment #2*].

E. A roof mounted system may be mounted on a principal building or accessory building. A roof mounted system, whether mounted on the principal building or accessory building, may not exceed the maximum principal building height or accessory building height specified for the building type in the underlying zoning district. In no instance shall any part of the solar energy system extend beyond the edge of the roof.

F. A ground mounted system shall not exceed the maximum building height for accessory buildings.

G. The surface area of a ground mounted system, regardless of the mounted angle, shall be calculated as part of the overall lot coverage.

H. A ground mounted system or system attached to an accessory building shall not be located within the required front yard setback.

I. The minimum solar energy system setback distance from the property lines shall be equivalent to the building setback or accessory building setback requirement of the underlying zoning district. [*Please note that some municipalities have less stringent accessory structure setbacks, e.g. 10 foot side yard setback for sheds. If accessory structure setbacks are less stringent than the primary structure setback, it is recommended that the municipality require solar energy systems to have the setback requirements of the primary structure in the underlying zoning district.*]

J. All mechanical equipment associated with and necessary for the operation of the solar energy system shall comply with the following:

    a. Mechanical equipment shall be screened from any adjacent property that is residentially zoned or used for residential purposes. The screen shall consist of shrubbery, trees, or other non-invasive plant species which provides a visual screen. In lieu of a planting screen, a decorative fence meeting the requirements of the Zoning Ordinance may be used.

    b. Mechanical equipment shall not be located within the minimum front yard setback of the underlying zoning district.

    c. Mechanical equipment shall comply with the setbacks specified for accessory structures in the underlying zoning district. [*Please note that some municipalities have less stringent accessory structure setbacks, e.g. 10 foot side yard setback for sheds. If accessory structure setbacks are less stringent than the primary structure setback, it is recommended that the municipality require*

solar energy systems to have the setback requirements of the primary structure in the underlying zoning district.]

K. Solar panels shall be placed such that concentrated solar radiation or glare shall not be directed onto nearby properties or roadways.

L. Solar panels shall not be placed in the vicinity of any airport in a manner that would interfere with airport flight patterns. Acknowledgement from the Federal Aviation Administration may be necessary.

M. All power transmission lines from a ground mounted solar energy system to any building or other structure shall be located underground.

N. A solar energy system shall not be used to display advertising, including signage, streamers, pennants, spinners, reflectors, ribbons, tinsel, balloons, flags, banners or similar materials. The manufacturers and equipment information, warning, or indication of ownership shall be allowed on any equipment of the solar energy system provided they comply with the prevailing sign regulations.

O. A solar energy system shall not be constructed until a building/zoning permit has been approved and issued.

P. The design of the solar energy system shall conform to applicable industry standards. A building permit shall be obtained for a solar energy system per the Pennsylvania Uniform Construction Code (UCC), Act 45 of 1999, as amended, and the regulations adopted by the Department of Labor and Industry. All wiring shall comply with the applicable version of the National Electric Code (NEC). The local utility provider shall be contacted to determine grid interconnection and net metering policies. The Applicant shall submit certificates of design compliance obtained by the equipment manufacturer from a certifying organization and any such design shall be certified by an Engineer registered in the Commonwealth of Pennsylvania. [*Please note that the existing roof structure and the weight of the solar energy system shall be taken into consideration when applying for a solar energy system permit*].

Q. The solar energy system shall comply with all applicable [*Township/Borough*] Ordinances and Codes so as to ensure the structural integrity of such solar energy system.

R. Before any construction can commence on any solar energy system the property owner must acknowledge that he/she is the responsible party for owning and maintaining the solar energy system.

2. If a ground mounted solar energy system is removed, any earth disturbance as a result of the removal of the ground mounted solar energy system shall be graded and reseeded.

3. If a ground mounted solar energy system has been abandoned (meaning not having been in operation for a period of six (6) months) or is defective or is deemed to be unsafe by the [*Township/Borough*] Building Code Official, the solar energy system shall be required to be repaired by the owner to meet federal, state and local safety standards, or be removed by the property owner within the time period allowed by the [*Township/Borough*] Building Code Official. If the owner fails to remove or repair the defective or abandoned solar energy system, the [*Township/Borough*] may pursue a legal action to have the system removed at the owner's expense.

Section 4. All other portions, parts and provisions of the Zoning Ordinance of [*Municipality name*], as heretofore enacted and amended, shall remain in force and effect.

Section 5. This Ordinance shall take effect five (5) days after the date of its enactment.

DULY ORDAINED AND ENACTED the _____day of _____, 20__, by the [*Governing Body*] of the Township/Borough of [*Municipality name*], Monroe County, Pennsylvania, in lawful session duly assembled.

[*Governing Body*] of [*Municipality name*]

_____

_____

_____

_____

_____

ATTEST:

_____

ROOF MOUNTED SOLAR ENERGY SYSTEM (ATTACHMENT #1)

GROUND MOUNTED SOLAR ENERGY SYSTEM (ATTACHMENT #2)

From: Nathan Cline
Sent: Tuesday, June 25, 2013 2:16 PM
To: Nathan Cline
Subject: FW: July 18 APAPA-Southeast: Renewable Energy Frameworks Event

---

From: Dula, Justin
Sent: Friday, June 14, 2013 9:36 AM
Subject: July 18 APAPA-Southeast: Renewable Energy Frameworks Event

Dear Municipal Managers and Engineers,
I wanted to email you about an event on **Thursday July 18 from 8:45 to noon on DVRPC's Renewable Energy Frameworks**. This event is also being offered as a webinar for those who are not able to attend in person.

This event will discuss a tool created to assist municipalities in the region to create renewable energy ordinances. The tool is meant to provide assistance for all types of municipalities in the region - from those actively seeking to encourage renewable energy to those who wish to have an updated ordinance to avoid the variance process for each renewable energy system application. The frameworks are available at http://www.dvrpc.org/EnergyClimate/aeowg.htm.

Please let me know if you have any questions on the event or the frameworks, as Delaware County Planning Department was involved in their creation using model ordinances from within Delaware County. We are also happy to work with municipalities in implementing the framework ordinances.

Thanks,
Justin

Justin Dula, AICP
Manager, County and Regional Planning
Delaware County Planning Department
201 West Front Street
Media, PA 19063-2708
p: (610) 891-5219
f: (610) 891-5203
e: dulaj@co.delaware.pa.us
w: http://www.co.delaware.pa.us/planning

From: APAPA-Southeast [mailto:admin@apapase.org]
Sent: Friday, June 07, 2013 11:30 AM
To: Dula, Justin
Subject: APAPA-Southeast: Renewable Energy -- Coming in July!

American Planning Association
Pennsylvania Chapter
Southeast Section

July 18: Choosing the Renewable Energy Frameworks That Work for Your Community

Interested in creating a renewable energy ordinance for your community?
Register for the 7/18 PDI: Choosing the Renewable Energy Frameworks that Work for Your Community

APA PA SE PDI: Choosing the Renewable Energy Frameworks that Work for Your Community
Register at http://energyframeworks.eventbrite.com/

Join a panel of local experts who will provide an overview of considerations for developing a renewable energy ordinance for solar, small-wind, and geothermal energy systems in Pennsylvania. An overview of Delaware Valley Regional Planning Commission's (DVRPC's) Renewable Energy Ordinance Frameworks, which include a menu of permissive and restrictive ordinance language options; accompanied by explanatory guidance on the barriers, benefits and cautions for adopting language will be provided. Additionally, panelists will address the key issues surrounding the regulation of each type of renewable energy system at the municipal level.

This session is a part of the 2013 Greenbuild Challenge.

Read online.

Connect with us online!

Thanks to our generous Platinum- and Gold-Level sponsors:

Interested in sponsoring this E-newsletter? Email us!
